UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,629	11/18/2000	Kunihiro Watanabe	3120/FLK	7785

26304 7590 06/29/2005

KATTEN MUCHIN ROSENMAN LLP
575 MADISON AVENUE
NEW YORK, NY 10022-2585

EXAMINER	
MOE, AUNG SOE	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/715,629	WATANABE ET AL.	
	Examiner	Art Unit	
	Aung S. Moe	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,10 and 11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-5 and 11* is/are allowed.

6)☒ Claim(s) *10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5/24/2005 have been fully considered but they are not persuasive.

In pages 8 and 9 of the remarks, with respect to the combination of the Applicant alleged that "the teaching or suggestion to make the claimed combination and reasonable expectation of success must both be found in the prior, not in applicant's disclosure"

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, the secondary reference Kamasz '652 clearly suggested that it is desirable to additionally accumulating charges during a continued on-state of the light emitting means with the use of first accumulation means (i.e., noted the charges accumulated in the sensor 214 during time period t1 while the light emitting means 204 is continued on-state as shown in Fig. 3A) and then transfers the obtained charges (i.e., noted the transferred of the obtained charges during the light emitting on-state as shown in Fig. 3B) in order to accurately detect the light energy of a signal of interest even when either or both the signal of interest and background illumination vary across plural pixels of an imaging array as suggested in col. 3, lines 60-65. In view of this, it is cleared that Kamasz '652 clearly suggested the advantage of additionally accumulating

charges during a continue on-state of the light emitting means as required by present claimed invention.

Therefore, the Examiner asserts having a system of Anagnostopoulos '036 and then given the well-established teaching of Kamasz '652, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Anagnostopoulos '036 as taught by Kamasz '652, since Kamasz '652 clearly suggested in col. 3, lines 60+ such a modification would provide an accurate detection of a signal of interest during illumination period.

In view of the above, the present claimed invention is considered obvious over Anagnostopoulos '036 in view of Kamasz '652 as follows:

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anagnostopoulos (U.S. 4,490,036) in view of Kamasz et al. (U.S. 5,585,652).

Regarding claim 10, Anagnostopoulos '036 discloses a solid-state imaging device for use in a solid state imaging apparatus (Fig. 2; col. 3, lines 40+, and col. 4, lines 25+) including a light emitting means (i.e., the element 10 as shown in Fig. 1), the device comprising:

means for receiving an incident light to thereby generate charges (i.e., noted the CCD sensor 18), the receiving means having one or more photoelectric conversion elements (i.e., noted the photodiodes 22);

first accumulation means(i.e., noted the first photo-charges generated during the first control signal "T1/>1-4" provided by the timing control unit 102), in response to a first control signal (i.e., the control time "T1/>1-4"), for accumulating the charges generated from each of the photoelectric conversion elements (22), the first accumulation means having one or more charge accumulation devices (i.e., noted that the charges accumulated in the CCD sensor as shown in Fig. 4 and 9 in response to the first control signals "T1/>1-4" respectively; see Figs. 4, 8 and 9; col. 4, lines 25+, col. 5, lines 45+ and col. 6, lines 16+);

second accumulation means (i.e., noted the second photo-charges generated during the second control signal "T2/>1-4" provided by the timing control unit 102), in response to a second control signal (i.e., the control time "T2/>1-4"), for accumulating the received charges

generated from each of the photoelectric conversion elements (22), the second accumulation means having one or more charge accumulation devices (i.e., noted that the charges accumulated in the CCD sensor as shown in Fig. 4 and 9 in response to the first control signals "T2/>1-4" respectively; see Figs. 4, 8 and 9; col. 4, lines 25+, col. 5, lines 45+ and col. 6, lines 1+),

first transfer means (i.e., Fig. 2, the elements 26) for transferring the charges accumulated in the first charge accumulation means in a serial sequence as a first charge signal (i.e., noted that the charges accumulated during the fist transferred in a serial sequence during the time periods t0-t2 as first frame signal as shown in Figs. 8 and 9);

second transfer means (i.e., Fig. 2, the elements 26') for transferring charges accumulated in the second charge accumulation means in a serial sequence as a second charge signal (i.e., noted that the charges accumulated during the second charge accumulation period are transferred in a serial sequence during the time periods t3-t4 as shown in Figs. 8 and 9);

control means for outputting the first control signal **or** the second control signal to select the first **or** the second charge accumulation means (i.e., noted that the clock unit 102 is capable of selecting the sensor 18 to output the accumulated first/second charges by providing the respective control signals T1/T2), thereby allowing the charges to be accumulated in the first **or** the second charge accumulation means, respectively (i.e., see Figs. 8 and 9; col. 5, line 45 – col. 6, lines 45); and

means for calculating a difference (i.e., noted the differential output amplifier 110 as shown in Figs. 5 and 6 at the output of the imaging device 18 for calculating a difference of the first charge signal and second charged signal; see col. 5, lines 25+, and col. 6, lines 68+) between

the first charge signal and the second charge signal to thereby output a differential signal in sequence (col. 6, lines 10-68 and col. 7, line 1+);

wherein the light emitting means (10) which is operated wither in an on-state or in an off-state thereof (i.e., see Fig. 8; col. 5, lines 60+); and said control means (102) outputs the first control signals (T1) and the second control signals (T2) during the on-state and the off-state of the said light emitting means (i.e., see Fig. 8; and col. 5, lines 45- col. 6, lines 30).

Furthermore, it is noted that Anagnostopoulos '036 does not explicitly show wherein the first accumulation means additionally accumulates charges obtained during a continued on-state of the light emitting means and transfer the obtained charges as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Kamasz '652. In particular, Kamasz '652 clearly suggested that it is desirable to additionally accumulating charges during a continued on-state of the light emitting means with the use of first accumulation means (i.e., noted the charges are additionally accumulated, e.g., noted the charge L+B3, in the sensor 214 during time period t1 while the light emitting means 204 is continued on-state as shown in Fig. 3A; see col. 2, lines 1-10, and col. 9, lines 10-15) and then transfers the obtained charges (i.e., noted the transferred of the obtained charges during the light emitting on-state as shown in Fig. 3B; col. 6, lines 35+ and col. 9, lines 2+) in order to accurately detect the light energy of a signal of interest even when either or both the signal of interest and background illumination vary across plural pixels of an imaging array as suggested in col. 3, lines 60-65. In view of this, it is cleared that Kamasz '652 clearly suggested the

advantage of additionally accumulating charges during a continue on-state of the light emitting means as required by present claimed invention.

Therefore, having a system of Anagnostopoulos '036 and then given the well-established teaching of Kamasz '652, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Anagnostopoulos '036 as taught by Kamasz '652, since Kamasz '652 clearly suggested in col. 3, lines 60+ such a modification would provide an accurate detection of a signal of interest during illumination period.

Allowable Subject Matter

5. Claims 1-5 and 11 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 571-272-7314. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 571-272-7308. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
June 26, 2005